CIVIL QUALITY CONSULTANTS & ENGINEERS

ISO 9001:2015 Certified & NABL Accredited Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

Date 04.02.2023

ATTERBERG LIMITS TEST FOR WMM

Client	: Assistant Executive Engineer, R R Nagar Sub Division, BBMP, Bangalore.
Agency	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
Name of Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Adarsha Layout (4th Cross Road(W0978)From Main Road to Dead end)
IS Code:	IS 2720(Part 5):1985
Date of Testing	02.02.2023 to 04.02.2023
Material Type	: Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	23.55	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Corporate Off.: No. 133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalore-560 056
Contact: 8553518550, 080-23240644 Email: civilqualityconsultants@gmail.com

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CIVIL QUALITY CONSULTANTS & ENGINEERS

ISO 9001:2015 Certified & NABL Accredited Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

CQCE/BBMP/NCR/17/2022-2023

Date 04.02.2023

ATTERBERG LIMITS TEST FOR WMM

Client : **Assistant Executive Engineer,** R R Nagar Sub Division, BBMP, Bangalore.

Agency : **M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.

Name of Work : Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore

Location Adarsha Layout (4th Cross Road(W0978)From Main Road to Dead end)

IS Code: IS 2720(Part 5):1985

Date of Testing 02.02.2023 to 04.02.2023

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	22.50	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Corporate Off.: No. 133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalore-560
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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Lab No:

CQCE/BBMP/NCR/17/2022-2023

Date 04.02.2023

ATTERBERG LIMITS TEST FOR WMM

Client	: **Assistant Executive Engineer,** R R Nagar Sub Division, BBMP, Bangalore.
Agency	: **M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Adarsha Layout (4th Cross Road(W0978)From Main Road to Dead end)
IS Code:	IS 2720(Part 5):1985
Date of Testing	02.02.2023 to 04.02.2023
Material Type	: Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	22.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Corporate Off.: No. 133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalore-560 0
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CIVIL QUALITY CONSULTANTS & ENGINEERS

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No:- CQCE/BBMP/NCR/17/2022-2023

Date 04.02.2023

ATTERBERG LIMITS TEST FOR WMM

Client	: **Assistant Executive Engineer,** R R Nagar Sub Division, BBMP, Bangalore.
Agency	: **M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Adarsha Layout (4th Cross Road(W0978)From Main Road to Dead end)
IS Code:	IS 2720(Part 5):1985
Date of Testing	02.02.2023 to 04.02.2023
Material Type	: Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	19.55	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Corporate Off.: No. 133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalore-560 056
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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

CQCE/BBMP/NCR/17/2022-2023

Date 04.02.2023

ATTERBERG LIMITS TEST FOR WMM

Client : **Assistant Executive Engineer,** R R Nagar Sub Division, BBMP, Bangalore.

Agency : **M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.

Name of Work : Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore

Location Adarsha Layout (4th Cross Road(W0978)From Main Road to Dead end)

IS Code: IS 2720(Part 5):1985

Date of Testing 02.02.2023 to 04.02.2023

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	22.50	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Note:

1. The Material is satisfied as per the Requirements.

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Corporate Off.: No. 133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalore-56
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CIVIL QUALITY CONSULTANTS & ENGINEERS

ISO 9001:2015 Certified & NABL Accredited Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

CQCE/BBMP/NCR/17/2022-2023

Date 04.02.2023

ATTERBERG LIMITS TEST FOR WMM

Client : **Assistant Executive Engineer,** R R Nagar Sub Division, BBMP, Bangalore.

Agency : **M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.

Name of Work : Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore

Location Jnanajyothi nagara (4th Cross Road(W1233)Thulasamma Badavane Jnanajyothi nagara From Surya department Road to Dead end)

IS Code: IS 2720(Part 5):1985

Date of Testing 02.02.2023 to 04.02.2023

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	18.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Corporate Off.: No. 133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalore-
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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

CQCE/BBMP/NCR/17/2022-2023

Date 04.02.2023

ATTERBERG LIMITS TEST FOR WMM

Client	: **Assistant Executive Engineer,** R R Nagar Sub Division, BBMP, Bangalore.
Agency	: **M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Jnanajyothi nagara (4th Cross Road(W1233)Thulasamma Badavane Jnanajyothi nagara From Surya department Road to Dead end)
IS Code:	IS 2720(Part 5):1985
Date of Testing	02.02.2023 to 04.02.2023
Material Type	: Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	20.55	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

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Date 04.02.2023

ATTERBERG LIMITS TEST FOR WMM

Client	: **Assistant Executive Engineer,** R R Nagar Sub Division, BBMP, Bangalore.
Agency	: **M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
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Location	Jnanajyothi nagara (4th Cross Road(W1233)Thulasamma Badavane Jnanajyothi nagara From Surya department Road to Dead end)
IS Code:	IS 2720(Part 5):1985
Date of Testing	02.02.2023 to 04.02.2023
Material Type	: Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	18.50	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

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CQCE/BBMP/NCR/17/2022-2023

Date 04.02.2023

ATTERBERG LIMITS TEST FOR WMM

Client : **Assistant Executive Engineer,** R R Nagar Sub Division, BBMP, Bangalore.

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Name of Work : Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore

Location Jnanajyothi nagara (4th Cross Road(W1233)Thulasamma Badavane Jnanajyothi nagara From Surya department Road to Dead end)

IS Code: IS 2720(Part 5):1985

Date of Testing 02.02.2023 to 04.02.2023

Material Type : Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	18.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Note:

1. The Material is satisfied as per the Requirements.

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

CQCE/BBMP/NCR/17/2022-2023

Date 04.02.2023

ATTERBERG LIMITS TEST FOR WMM

Client	: **Assistant Executive Engineer,** R R Nagar Sub Division, BBMP, Bangalore.
Agency	: **M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Jnanajyothi nagara (4th Cross Road(W1233)Thulasamma Badavane Jnanajyothi nagara From Surya department Road to Dead end)
IS Code:	IS 2720(Part 5):1985
Date of Testing	02.02.2023 to 04.02.2023
Material Type	: Wet Mix Macadam

Sl. No.	Particulars	Test Results	Requirement as per MORTH 5th edition Cl.406.2.1.2
1	Liquid Limit	20.00	-
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

CIVIL QUALITY CONSULTANTS & ENGINEERS

Note:

1. The Material is satisfied as per the Requirements.

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Corporate Off.: No. 133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalore-56
Contact: 8553518550, 080-23240644 Email: civilqualityconsultants@gmail.com

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CIVIL QUALITY CONSULTANTS & ENGINEERS
ISO 9001:2015 Certified & NABL Accredited Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No : CQCE/BBMP/NCR/17/2022-2023 Date: 14.02.2023

TEST REPORT

Client	:	**: Assistant Executive Engineer,** R R Nagar Sub Division, BBMP, Bangalore.
Agency	:	**: M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of the work	:	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
IS Code	:	IS 73:2013, IS 1203:1978(RA 2008), IS 1205:1978(RA 2009), IS 1208:1978(RA 2009), IS 1209:1978(RA 2009)
Date of testing	:	14.02.2023

The results of the tests conducted on the bitumen sample using for Bituminous Macadam

Sl. No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	46	Min 45
2	Softening point, ^{0}C	52	Min. 47
3	Ductility at 27^{0}C, cm	>100	Min. 40
4	Flash Point, ^{0}C	258	Min. 220

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Corporate Off.: No. 133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalore-560
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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Lab No.: CQCE/BBMP/NCR/17/2022-2023

14.02.2023

Aggregate Impact Value

Client	**: Assistant Executive Engineer,** R R Nagar Sub Division, BBMP, Bangalore.
Agency	**: M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of the Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
IS Code:	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Bituminous Macadam
Date of Testing	14.02.2023

Sl No.	Details	Test No. 1	Test No. 4	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	400	400	
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	85	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	315	313	
4	Aggregate Impact value = percent fines	21.25	21.75	
	100* (W_2/W_1)%			**21.50**

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Macadam is 30% (Specification as per MORTH 5th edition table no 500.6)

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Note:

1. The Material is satisfied as per the Requirements.

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

14.02.2023

Aggregate Impact Value

Client	**: Assistant Executive Engineer,** R R Nagar Sub Division, BBMP, Bangalore.
Agency	**: M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of the Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
IS Code:	IS 2386 (Part 4):1963(RA 2011)
Type of Mix	Bituminous Macadam
Date of Testing	14.02.2023

Sl No.	Details	Test No. 1	Test No. 4	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	400	400	
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	82	84	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	318	316	
4	Aggregate Impact value = percent fines	20.50	21.00	
	100* (W_2/W_1)%			**20.75**

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Macadam is 30% (Specification as per MORTH 5th edition table no 500.6)

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Note:

1. The Material is satisfied as per the Requirements.

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

14.02.2023

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: AAssistant Executive Engineer, R R Nagar Sub Division, BBMP, Bangalore.
Agency	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
Name of Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
BIS Code:	IS 2386(Part 1): 1963 (RA 2011)
Type of Mix	Bituminous Macadam
Date of Testing	14.02.2023

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 500.6
1	Flakiness Index	12.3	12.5	Combined Flakiness & Elongation index Max 35%
2	Elongation Index	14.1	13.6	
	Combined Flakiness & Elongation index	26.4	26.1	

Note:
1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Corporate Off.: No. 133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalore-560 05
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CIVIL QUALITY CONSULTANTS & ENGINEERS

ISO 9001:2015 Certified & NABL Accredited Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

14.02.2023

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: AAssistant Executive Engineer, R R Nagar Sub Division, BBMP, Bangalore.
Agency	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
Name of Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
BIS Code:	IS 2386(Part 1): 1963 (RA 2011)
Type of Mix	Bituminous Macadam
Date of Testing	14.02.2023

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 500.6
1	Flakiness Index	13.5	10.2	Combined Flakiness & Elongation index Max 35%
2	Elongation Index	9.6	14.1	
	Combined Flakiness & Elongation index	23.1	24.3	

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Corporate Off.: No. 133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalore-560 05
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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

14.02.2023

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**: Assistant Executive Engineer,** R R Nagar Sub Division, BBMP, Bangalore.
Agency	**: M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
BIS Code:	IS 2386(Part 1): 1963 (RA 2011)
Type of Mix	Bituminous Macadam
Date of Testing	14.02.2023

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 500.6
1	Flakiness Index	12.3	12.5	Combined Flakiness & Elongation index Max 35%
2	Elongation Index	14.1	13.6	
	Combined Flakiness & Elongation index	26.4	26.1	

Note:
1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Corporate Off.: No. 133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalore-560
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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

14.02.2023

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**: Assistant Executive Engineer,** R R Nagar Sub Division, BBMP, Bangalore.
Agency	**: M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
BIS Code:	IS 2386(Part 1): 1963 (RA 2011)
Type of Mix	Bituminous Macadam
Date of Testing	14.02.2023

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 500.6
1	Flakiness Index	13.5	10.2	Combined Flakiness & Elongation index Max 35%
2	Elongation Index	9.6	14.1	
	Combined Flakiness & Elongation index	23.1	24.3	

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

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ISO 9001:2015 Certified & NABL Accredited Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Ref No: CQCE/BBMP/NCR/17/2022-2023

16.02.2023

Specific Gravity And Water Absorption Test

Client	: Assistant Executive Engineer, R R Nagar Sub Division, BBMP, Bangalore.
Agency	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
Name of the Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
IS code:	IS 2386 (Part 3):1963(RA 2011)
Type of Mix	Bituminous Macadam
Date of Testing	14.02.2023 to 16.02.2023

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2021	2020	2023	
2	Weight of basket suspended in water	W_2 g	752	752	752	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_3$ g	1269	1268	1271	
4	Weight of saturated surface dry aggregate in air	W_3 g	2017	2017	2016	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	748	749	745	
6	Weight of oven dried aggregate	W_4 g	2008	2008	2009	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.684	2.681	2.697	2.691
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.717	2.714	2.722	2.720
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.45%	0.45%	0.35%	0.40%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Macadam is 2.0%(AS per MORTH specification 5th edition table no 500.6)

CIVIL QUALITY CONSULTANTS & ENGINEERS

Note:

1. The Material is satisfied as per the Requirements.

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

CQCE/BBMP/NCR/17/2022-2023

Date: 14.02.2023

Aggregate Gradation Test

Client	: Assistant Executive Engineer, R R Nagar Sub Division, BBMP, Bangalore.
Agency	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
Name of the work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
IS Code:	IS 2386 (Part 1):1963(RA 2002)
Type of Mix	Bituminous Macadam
Date of Testing	14.02.2023

5000 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Specification as per MORTH 5th edition table 500-7	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade-II MORTH 5th edition
19	287	5.74	5.74	94.26	90-100	
13.2	1814	36.28	42.02	57.98	56-88	
4.75	1705	34.10	76.12	23.88	16-36	
2.36	668	13.36	89.48	10.52	4-19	
0.3	140	2.80	92.28	7.72	2-10	
0.075	78	1.56	93.84	6.16	0-8	

Total Weight of Sample: 5000 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Specification as per MORTH 5th edition table 500-7	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade-II MORTH 5th edition
19	356	7.12	7.12	92.88	90-100	
13.2	1541	30.82	37.94	62.06	56-88	
4.75	1452	29.04	66.98	33.02	16-36	
2.36	855	17.10	84.08	15.92	4-19	
0.3	542	10.84	94.92	5.08	2-10	
0.075	202	4.04	98.96	1.04	0-8	

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Note:

1. The Material is satisfied as per the Requirements.

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP, Bangalore

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

CQCE/BBMP/NCR/17/2022-2023

Date: 14.02.2023

Aggregate Gradation Test

Client	: Assistant Executive Engineer, R R Nagar Sub Division, BBMP, Bangalore.
Agency	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
Name of the work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
IS Code:	IS 2386 (Part 1):1963(RA 2002)
Type of Mix	Bituminous Macadam
Date of Testing	14.02.2023

5000 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Specification as per MORTH 5th edition table 500-7	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade-II MORTH 5th edition
19	295.6	5.91	5.91	94.09	90-100	
13.2	1545	30.90	36.81	63.19	56-88	
4.75	1623	32.46	69.27	30.73	16-36	
2.36	685	13.70	82.97	17.03	4-19	
0.3	458	9.16	92.13	7.87	2-10	
0.075	85	1.70	93.83	6.17	0-8	

Total Weight of Sample: 5000 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Specification as per MORTH 5th edition table 500-7	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade-II MORTH 5th edition
19	356	7.12	7.12	92.88	90-100	
13.2	1541	30.82	37.94	62.06	56-88	
4.75	1452	29.04	66.98	33.02	16-36	
2.36	855	17.10	84.08	15.92	4-19	
0.3	542	10.84	94.92	5.08	2-10	
0.075	202	4.04	98.96	1.04	0-8	

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Divisicn
BBMP, Bengaluru

Authorised Signatory

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

17.02.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

AASHTO T 164 & AASHTO T 30

CLIENT	: Assistant Executive Engineer, R R Nagar Sub Division, BBMP, Bangalore.
AGENCY	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
NAME OF THE WORK	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Jnanajyothi nagara (Sri Gangaratnappa Road(W1259)From Ullal Main Road to #30/37)
SAMPLE I/D	Sample Supplied by Agency
DATE OF TESTING	17.02.2023

BITUMEN CONTENT DETERMINATION

Description	Test 1	Test 2	Requirements as per MORTH 5th edition Table 500.7
1. Weight of Mixture before Test, g	500	500	Grade II, Min 3.4
2. Weight of Mixture after Test, g	482.2	482.4	
3. Weight of Asphalt and Mineral matter Extracted, g	-	-	
4. Weight of Mineral Matter, g.	-	-	
5. Weight of Ash, g			
6. Weight of Bitumen Extracted, g. (corrected)	17.8	17.60	
7. Bitumen content in %	3.56	3.52	
8. Average	3.54		

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	31.5	6.53	6.53	93.47	90-100
13.2	175.8	36.46	42.99	57.01	56-88
4.75	160	33.18	76.17	23.83	16-36
2.36	54.8	11.36	87.54	12.46	4-19
0.3	32.1	6.66	94.19	5.81	2-10
0.075	8.5	1.76	95.96	4.04	0-8

SIEVE SIZE	Test 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	32.6	6.76	6.76	93.24	90-100
13.2	145.8	30.22	36.98	63.02	56-88
4.75	172.9	35.84	72.82	27.18	16-36
2.36	78.5	16.27	89.10	10.90	4-19
0.3	25.2	5.22	94.32	5.68	2-10
0.075	15.6	3.23	97.55	2.45	0-8

Note:

1. The Material is satisfied as per the Requirements.

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division,
BBMP Bengaluru.

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

17.02.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

AASHTO T 164 & AASHTO T 30

CLIENT	: Assistant Executive Engineer, R R Nagar Sub Division, BBMP, Bangalore.
AGENCY	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
NAME OF THE WORK	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Adarsha Layout (4th Cross Road(W0978)From Main Road to Dead end)
SAMPLE I/D	Sample Supplied by Agency
DATE OF TESTING	17.02.2023

BITUMEN CONTENT DETERMINATION

Description	Test 1	Test 2	Requirements as per MORTH 5th edition Table 500.7
1. Weight of Mixture before Test, g	500	500	Grade II, Min 3.4
2. Weight of Mixture after Test, g	482.2	482.1	
3. Weight of Asphalt and Mineral matter Extracted, g	-	-	
4. Weight of Mineral Matter, g.	-	-	
5. Weight of Ash, g			
6. Weight of Bitumen Extracted, g. (corrected)	17.8	17.90	
7. Bitumen content in %	3.56	3.58	
8. Average	3.57		

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	36.9	7.65	7.65	92.35	90-100
13.2	165.4	34.30	41.95	58.05	56-88
4.75	147.8	30.65	72.60	27.40	16-36
2.36	52.3	10.85	83.45	16.55	4-19
0.3	35.4	7.34	90.79	9.21	2-10
0.075	8.2	1.70	92.49	7.51	0-8

SIEVE SIZE	Test 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	25.1	5.21	5.21	94.79	90-100
13.2	147.8	30.66	35.86	64.14	56-88
4.75	192.3	39.89	75.75	24.25	16-36
2.36	75.4	15.64	91.39	8.61	4-19
0.3	22.6	4.69	96.08	3.92	2-10
0.075	12.4	2.57	98.65	1.35	0-8

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Assistant Executive Engineer
Rajarajeshwarinagar Sub Division
BBMP Bengaluru

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No: CQCE/BBMP/NCR/17/2022-2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

AASHTO T 164 & AASHTO T 30

18.02.2023

CLIENT	: Assistant Executive Engineer, R R Nagar Sub Division, BBMP, Bangalore.
AGENCY	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
NAME OF THE WORK	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Jnanajyothi nagara(4th Cross Road(W1233)Thulasamma Badavane Jnanajyothi nagara From Surya department Road to Dead end)
SAMPLE I/D	Sample Supplied by Agency
DATE OF TESTING	18.02.2023

BITUMEN CONTENT DETERMINATION

Description	Test 1	Test 2	Requirements as per MORTH 5th edition Table 500.7
1. Weight of Mixture before Test, g	500	500	Grade II, Min 3.4
2. Weight of Mixture after Test, g	482.2	482	
3. Weight of Asphalt and Mineral matter Extracted, g	-	-	
4. Weight of Mineral Matter, g.	-	-	
5. Weight of Ash, g			
6. Weight of Bitumen Extracted, g. (corrected)	17.8	18.00	
7. Bitumen content in %	3.56	3.60	
8. Average	3.58		

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	34.8	7.22	7.22	92.78	90-100
13.2	165.8	34.38	41.60	58.40	56-88
4.75	150.2	31.15	72.75	27.25	16-36
2.36	52.9	10.97	83.72	16.28	4-19
0.3	35.4	7.34	91.06	8.94	2-10
0.075	8.9	1.85	92.91	7.09	0-8

SIEVE SIZE	Test 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	22.3	4.63	4.63	95.37	90-100
13.2	140.7	29.19	33.82	66.18	56-88
4.75	175.5	36.41	70.23	29.77	16-36
2.36	72.3	15.00	85.23	14.77	4-19
0.3	32.6	6.76	91.99	8.01	2-10
0.075	12.8	2.66	94.65	5.35	0-8

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP, Bangaluru

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Job No.: CQCE/BBMP/NCR/17/2022-2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

AASHTO T 164 & AASHTO T 30

18.02.2023

CLIENT	: Assistant Executive Engineer, R R Nagar Sub Division, BBMP, Bangalore.
AGENCY	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
NAME OF THE WORK	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Jnanajyothi nagara(JNS Enterprises Road(W1062) Anuraga #28 From East side to West side)
SAMPLE I/D	Sample Supplied by Agency
DATE OF TESTING	18.02.2023

BITUMEN CONTENT DETERMINATION

Description	Test 1	Test 2	Requirements as per MORTH 5th edition Table 500.7
1. Weight of Mixture before Test, g	500	500	Grade II, Min 3.4
2. Weight of Mixture after Test, g	482.2	482.4	
3. Weight of Asphalt and Mineral matter Extracted, g	-	-	
4. Weight of Mineral Matter, g.	-	-	
5. Weight of Ash, g			
6. Weight of Bitumen Extracted, g. (corrected)	17.8	17.60	
7. Bitumen content in %	3.56	3.52	
8. Average	3.54		

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	35.6	7.38	7.38	92.62	90-100
13.2	160.2	33.22	40.61	59.39	56-88
4.75	178.9	37.10	77.71	22.29	16-36
2.36	52.3	10.85	88.55	11.45	4-19
0.3	35.6	7.38	95.94	4.06	2-10
0.075	8.8	1.82	97.76	2.24	0-8

SIEVE SIZE	Test 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
26.5	0	0	0	100	100
19	35.9	7.44	7.44	92.56	90-100
13.2	150.6	31.22	38.66	61.34	56-88
4.75	178.5	37.00	75.66	24.34	16-36
2.36	72.3	14.99	90.65	9.35	4-19
0.3	26.4	5.47	96.12	3.88	2-10
0.075	10.5	2.18	98.30	1.70	0-8

Note:

1. The Material is satisfied as per the Requirements.

Assistant Executive Engineer

FOR CIVIL QUALITY CONSULTANTS & ENGINEERS

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

TEST REPORT

Date: 18.02.2023

Client	:	**: Assistant Executive Engineer,** RR Nagar Sub Division, BBMP, Bangalore.
Agency	:	**: M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of the work	:	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
IS Code	:	IS 73:2013, IS 1203:1978(RA 2008), IS 1205:1978(RA 2009), IS 1208:1978(RA 2009), IS 1209:1978(RA 2009)
Source	:	VG 30
Date of testing	:	18.02.2023

The results of the tests conducted on the bitumen sample using for Bituminous Concrete

Sl. No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 °C, 1/10 mm	48	Min 45
2	Softening point, °C	57	Min. 47
3	Ductility at 27°C, cm	> 100	Min. 40
4	Flash Point, °C	255	Min. 220

Note:

⇒ The Material is satisfied as per the Requirements.

Assistant Executive Engineer
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ISO 9001:2015 Certified & NABL Accredited
Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

Date: 18.02.2023

Aggregate Impact Value

Client	: **Assistant Executive Engineer,** RR Nagar Sub Division, BBMP, Bangalore.
Agency	: **M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of the Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
BIS Code	IS 2386(Part 4):1963
Type of Mix	Bituminous Concrete
Date of Testing	18.02.2023

Sl No.	Details	Test No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	383	381	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	298	294	
4	Aggregate Impact value = percent fines			
	100* (W_2/W_1) percent	22.19	22.83	**22.51**

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%(MORTH table no.500.16)

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Corporate Off.: No. 133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalore-560 (
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CIVIL QUALITY CONSULTANTS & ENGINEERS
ISO 9001:2015 Certified & NABL Accredited Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

Date: 18.02.2023

Aggregate Impact Value

Client	**: Assistant Executive Engineer,** RR Nagar Sub Division, BBMP, Bangalore.
Agency	**: M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of the Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
BIS Code	IS 2386(Part 4):1963
Type of Mix	Bituminous Concrete
Date of Testing	18.02.2023

Sl No.	Details	Test No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	386	384	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	82	80	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	304	304	
4	Aggregate Impact value = percent fines			
	100* (W_2/W_1) percent	21.24	20.83	**21.04**

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%(MORTH table no.500.16)

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Authorised Signatory

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

Date: 18.02.2023

Aggregate Impact Value

Client	**: Assistant Executive Engineer,** RR Nagar Sub Division, BBMP, Bangalore.
Agency	**: M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of the Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
BIS Code	IS 2386(Part 4):1963
Type of Mix	Bituminous Concrete
Date of Testing	18.02.2023

Sl No.	Details	Test No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	385	387	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	86	84	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	299	303	
4	Aggregate Impact value = percent fines			
	100* (W_2/W_1) percent	22.34	21.71	22.02

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%(MORTH table no.500.16)

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

Date : 18.02.2023

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Assistant Executive Engineer,** RR Nagar Sub Division, BBMP, Bangalore.
Agency	: **M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Bituminous Concrete
Date of Testing	18.02.2023

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 500.16
1	Flakiness Index	11.1	12.2	Combined Flakiness & Elongation index Max 35%
2	Elongation Index	10.7	10.3	
	Combined Flakiness & Elongation index	21.80	22.50	

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Assistant Executive Engineer
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BBMP Bengaluru

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ISO 9001:2015 Certified & NABL Accredited Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

Date : 18.02.2023

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Assistant Executive Engineer,** RR Nagar Sub Division, BBMP, Bangalore.
Agency	: **M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV.-(10), BBMP, Bangalore
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Bituminous Concrete
Date of Testing	18.02.2023

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 500.16
1	Flakiness Index	10.4	12.1	Combined Flakiness & Elongation index Max 35%
2	Elongation Index	11.6	10.7	
	Combined Flakiness & Elongation index	22.00	22.80	

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

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ISO 9001:2015 Certified & NABL Accredited Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

Date : 18.02.2023

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	: **Assistant Executive Engineer,** RR Nagar Sub Division, BBMP, Bangalore.
Agency	: **M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Bituminous Concrete
Date of Testing	18.02.2023

Sl no	Test	1	2	Requirements as per MORTH 5th edition table no 500.16
1	Flakiness Index	9.5	10.7	Combined Flakiness & Elongation index Max 35%
2	Elongation Index	12.5	11.8	
	Combined Flakiness & Elongation index	22.00	22.50	

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Assistant Executive Engineer
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ISO 9001:2015 Certified & NABL Accredited Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Lab No.: CQCE/BBMP/NCR/17/2022-2023

Date : 20.02.2023

Specific Gravity And Water Absorption Test

Client	: Assistant Executive Engineer, RR Nagar Sub Division, BBMP, Bangalore.
Agency	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
Name of the Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
BIS Code	IS 2386(Part 3):1963
Type of Mix	Bituminous Concrete
Date of Testing	18.02.2023 to 20.02.2023

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2020	2022	2023	
2	Weight of basket suspended in water	W_2 g	755	755	755	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1265	1267	1268	
4	Weight of saturated surface dry aggregate in air	W_3 g	2011	2013	2014	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	746	746	746	
6	Weight of oven dried aggregate	W_4 g	2004	2005	2007	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.686	2.688	2.690	2.688
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.712	2.717	2.716	2.715
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.35%	0.40%	0.35%	0.37%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Concrete is 2.0%(MORTH table 500.16)

Note:

1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

Aggregate Gradation Test

IS : 2386 Part I

Date : 18.02.2023

Client	: Assistant Executive Engineer, RR Nagar Sub Division, BBMP, Bangalore.
Agency	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
Name of the Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
BIS Code	IS 2386(Part 1):1963
Type of Mix	Bituminous Concrete
Date of Testing	18.02.2023

Total Weight of Sample: **5000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.17	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	423	8.46	8.46	91.54	90 - 100	
9.5	418	8.36	16.82	83.18	70 - 88	
4.75	759	15.18	32.00	68.00	53 - 71	
2.36	643	12.86	44.86	55.14	42 - 58	
1.18	512	10.24	55.10	44.90	34 - 48	
0.600	529	10.58	65.68	34.32	26 - 38	
0.300	464	9.28	74.96	25.04	18 - 28	
0.150	417	8.34	83.30	16.70	12 - 20	
0.075	499	9.98	93.28	6.72	4 - 10	

Total Weight of Sample: **5000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.17	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	438	8.76	8.76	91.24	90 - 100	
9.5	511	10.22	18.98	81.02	70 - 88	
4.75	746	14.92	33.90	66.10	53 - 71	
2.36	652	13.04	46.94	53.06	42 - 58	
1.18	623	12.46	59.40	40.60	34 - 48	
0.600	527	10.54	69.94	30.06	26 - 38	
0.300	429	8.58	78.52	21.48	18 - 28	
0.150	348	6.96	85.48	14.52	12 - 20	
0.075	422	8.44	93.92	6.08	4 - 10	

Note:

The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Assistant Executive Engineer
RR Nagar Sub Division

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR

Job No.: CQCE/BBMP/NCR/17/2022-2023

Date : 18.02.2023

Aggregate Gradation Test

IS : 2386 Part I

Client	: Assistant Executive Engineer, RR Nagar Sub Division, BBMP, Bangalore.
Agency	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
Name of the Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
BIS Code	IS 2386(Part 1):1963
Type of Mix	Bituminous Concrete
Date of Testing	18.02.2023

Total Weight of Sample: **5000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.17	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	326	6.52	6.52	93.48	90 - 100	
9.5	458	9.16	15.68	84.32	70 - 88	
4.75	714	14.28	29.96	70.04	53 - 71	
2.36	749	14.98	44.94	55.06	42 - 58	
1.18	511	10.22	55.16	44.84	34 - 48	
0.600	528	10.56	65.72	34.28	26 - 38	
0.300	473	9.46	75.18	24.82	18 - 28	
0.150	362	7.24	82.42	17.58	12 - 20	
0.075	554	11.08	93.50	6.50	4 - 10	

Total Weight of Sample: **5000** gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.17	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	312	6.24	6.24	93.76	90 - 100	
9.5	517	10.34	16.58	83.42	70 - 88	
4.75	707	14.14	30.72	69.28	53 - 71	
2.36	629	12.58	43.30	56.70	42 - 58	
1.18	521	10.42	53.72	46.28	34 - 48	
0.600	512	10.24	63.96	36.04	26 - 38	
0.300	644	12.88	76.84	23.16	18 - 28	
0.150	323	6.46	83.30	16.70	12 - 20	
0.075	359	7.18	90.48	9.52	4 - 10	

Note:
The Material is satisfied as per the Requirements.

CIVIL QUALITY CONSULTANTS & ENGINEERS

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP, Bengaluru

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

Date : 18.02.2023

Aggregate Gradation Test

IS : 2386 Part I

Client	: Assistant Executive Engineer, RR Nagar Sub Division, BBMP, Bangalore.
Agency	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
Name of the Work	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
BIS Code	IS 2386(Part 1):1963
Type of Mix	Bituminous Concrete
Date of Testing	18.02.2023

Total Weight of Sample: 5000 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.17	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	326	6.52	6.52	93.48	90 - 100	
9.5	411	8.22	14.74	85.26	70 - 88	
4.75	753	15.06	29.80	70.20	53 - 71	
2.36	651	13.02	42.82	57.18	42 - 58	
1.18	519	10.38	53.20	46.80	34 - 48	
0.600	532	10.64	63.84	36.16	26 - 38	
0.300	467	9.34	73.18	26.82	18 - 28	
0.150	435	8.70	81.88	18.12	12 - 20	
0.075	572	11.44	93.32	6.68	4 - 10	

Total Weight of Sample: 5000 gm

SIEVE SIZE, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Requirement as per MORTH table 500.17	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grade-II specification as per MORTH
13.2	313	6.26	6.26	93.74	90 - 100	
9.5	522	10.44	16.70	83.30	70 - 88	
4.75	741	14.82	31.52	68.48	53 - 71	
2.36	628	12.56	44.08	55.92	42 - 58	
1.18	534	10.68	54.76	45.24	34 - 48	
0.600	521	10.42	65.18	34.82	26 - 38	
0.300	649	12.98	78.16	21.84	18 - 28	
0.150	316	6.32	84.48	15.52	12 - 20	
0.075	417	8.34	92.82	7.18	4 - 10	

Note:
The Material is satisfied as per the Requirements.

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division

Corporate Off.: No.237, Bhuvaneshwari Sagar, Doddabasti Main Road, Bangalore-560 056.
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Authorised Signatory

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Ref: CQCE/BBMP/NCR/17/2022-2023

Date : 23.02.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE

AASHTO T 164 & AASHTO T 30

CLIENT	: Assistant Executive Engineer, RR Nagar Sub Division, BBMP, Bangalore.
AGENCY	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
NAME OF THE WORK	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Jnanajyothi nagara - 4th Main Road(W0994)
DATE OF TESTING	23.02.2023

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	472.4	472.6
3. Weight of Asphalt and Mineral matter Extracted, g	27.6	27.4
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	27.6	27.4
7. Bitumen content in %	5.52	5.48
8. Average	5.50	

GRADATION AFTER EXTRACTION

SIEVE SIZE mm	Test 1 Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	14.3	14.3	3.0	97.0	90 - 100
9.5	61.6	75.9	16.1	83.9	70 - 88
4.75	94.8	170.7	36.1	63.9	53 - 71
2.36	45.7	216.4	45.8	54.2	42 - 58
1.18	42.3	258.7	54.8	45.2	34 - 48
0.600	55.1	313.8	66.4	33.6	26 - 38
0.300	53.6	367.4	77.8	22.2	18 - 28
0.150	21.2	388.6	82.3	17.7	12 - 20
0.075	49.5	438.1	92.7	7.3	4 - 10

SIEVE SIZE mm	Test 2 Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	13.3	13.3	2.8	97.2	90 - 100
9.5	63.8	77.1	16.3	83.7	70 - 88
4.75	92.5	169.6	35.9	64.1	53 - 71
2.36	46.1	215.7	45.6	54.4	42 - 58
1.18	53.9	269.6	57.0	43.0	34 - 48
0.600	52.5	322.1	68.2	31.8	26 - 38
0.300	47.7	369.8	78.2	21.8	18 - 28
0.150	32.6	402.4	85.1	14.9	12 - 20
0.075	37.2	439.6	93.0	7.0	4 - 10

Note: Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Corporate Off.: No. 138, Bhuvaneshwari Nagar, Doddabasti Main Road, Bangalore-560 0
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CIVIL QUALITY CONSULTANTS & ENGINEERS

ISO 9001:2015 Certified & NABL Accredited
Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

CQCE/BBMP/NCR/17/2022-2023

Date : 23.02.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE

AASHTO T 164 & AASHTO T 30

CLIENT	: Assistant Executive Engineer, RR Nagar Sub Division, BBMP, Bangalore.
AGENCY	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
NAME OF THE WORK	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Jnanajyothi nagara - 4th Main Road(W0994)
DATE OF TESTING	23.02.2023

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	472.5	472.8
3. Weight of Asphalt and Mineral matter Extracted, g	27.5	27.2
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	27.5	27.2
7. Bitumen content in %	5.50	5.44
8. Average	5.47	

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	12.9	12.9	2.7	97.3	90 - 100
9.5	58.4	71.3	15.1	84.9	70 - 88
4.75	77.6	148.9	31.5	68.5	53 - 71
2.36	62.4	211.3	44.7	55.3	42 - 58
1.18	49.3	260.6	55.2	44.8	34 - 48
0.600	54.7	315.3	66.7	33.3	26 - 38
0.300	52.6	367.9	77.9	22.1	18 - 28
0.150	37.8	405.7	85.9	14.1	12 - 20
0.075	41.6	447.3	94.7	5.3	4 - 10

SIEVE SIZE	Test 2				
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	13.7	13.7	2.9	97.1	90 - 100
9.5	61.9	75.6	16.0	84.0	70 - 88
4.75	93.4	169	35.7	64.3	53 - 71
2.36	47.2	216.2	45.7	54.3	42 - 58
1.18	51.1	267.3	56.5	43.5	34 - 48
0.600	54.2	321.5	68.0	32.0	26 - 38
0.300	43.9	365.4	77.3	22.7	18 - 28
0.150	33.5	398.9	84.4	15.6	12 - 20
0.075	36.2	435.1	92.0	8.0	4 - 10

The material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Assistant Executive Engineer
Rajarajeshwari Nagar, Sub Division
BBMP Bengaluru

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Ref. No.: CQCE/BBMP/NCR/17/2022-2023 Date : 25.02.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE
AASHTO T 164 & AASHTO T 30

CLIENT	: Assistant Executive Engineer, RR Nagar Sub Division, BBMP, Bangalore.
AGENCY	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
NAME OF THE WORK	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Jnanajyothi nagara - 4th cross road Nandhini Parlour Beside Road(W1395)from Ullal main Road to North side
DATE OF TESTING	25.02.2023

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	472.3	472.8
3. Weight of Asphalt and Mineral matter Extracted, g	27.7	27.2
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	27.7	27.2
7. Bitumen content in %	5.54	5.44
8. Average	5.49	

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	14.6	14.6	3.1	96.9	90 - 100
9.5	55.8	70.4	14.9	85.1	70 - 88
4.75	95.7	166.1	35.2	64.8	53 - 71
2.36	42.3	208.4	44.1	55.9	42 - 58
1.18	51.6	260	55.0	45.0	34 - 48
0.600	53.7	313.7	66.4	33.6	26 - 38
0.300	54.7	368.4	78.0	22.0	18 - 28
0.150	32.6	401	84.9	15.1	12 - 20
0.075	40.9	441.9	93.6	6.4	4 - 10

SIEVE SIZE	Test 2				
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	15.5	15.5	3.3	96.7	90 - 100
9.5	63.7	79.2	16.8	83.2	70 - 88
4.75	91.2	170.4	36.0	64.0	53 - 71
2.36	46.7	217.1	45.9	54.1	42 - 58
1.18	51.6	268.7	56.8	43.2	34 - 48
0.600	54.8	323.5	68.4	31.6	26 - 38
0.300	43.2	366.7	77.6	22.4	18 - 28
0.150	35.8	402.5	85.1	14.9	12 - 20
0.075	46.6	449.1	95.0	5.0	4 - 10

Note:
The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Assistant Executive Engineer
RR Nagar Sub Division
BBMP Bengaluru

Authorised Signatory

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CIVIL QUALITY CONSULTANTS & ENGINEERS

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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

CQCE/BBMP/NCR/17/2022-2023

Date : 25.02.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE

AASHTO T 164 & AASHTO T 30

CLIENT	: Assistant Executive Engineer, RR Nagar Sub Division, BBMP, Bangalore.
AGENCY	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
NAME OF THE WORK	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Jnanajyothi nagara - 9th Cross Road(W1197)From North side to Ullala Main Road
DATE OF TESTING	25.02.2023

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	472.6	472.2
3. Weight of Asphalt and Mineral matter Extracted, g	27.4	27.8
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	27.4	27.8
7. Bitumen content in %	5.48	5.56
8. Average	5.52	

GRADATION AFTER EXTRACTION

SIEVE SIZE mm	Test 1 Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	14.1	14.1	3.0	97.0	90 - 100
9.5	58.3	72.4	15.3	84.7	70 - 88
4.75	96.2	168.6	35.7	64.3	53 - 71
2.36	41.7	210.3	44.5	55.5	42 - 58
1.18	52.2	262.5	55.5	44.5	34 - 48
0.600	57.3	319.8	67.7	32.3	26 - 38
0.300	48.6	368.4	78.0	22.0	18 - 28
0.150	25.1	393.5	83.3	16.7	12 - 20
0.075	50.6	444.1	94.0	6.0	4 - 10

SIEVE SIZE mm	Test 2 Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	13.9	13.9	2.9	97.1	90 - 100
9.5	64.5	78.4	16.6	83.4	70 - 88
4.75	93.8	172.2	36.5	63.5	53 - 71
2.36	46.7	218.9	46.4	53.6	42 - 58
1.18	52.2	271.1	57.4	42.6	34 - 48
0.600	53.3	324.4	68.7	31.3	26 - 38
0.300	47.9	372.3	78.8	21.2	18 - 28
0.150	30.5	402.8	85.3	14.7	12 - 20
0.075	33.2	436	92.3	7.7	4 - 10

Note:
1. The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Assistant Executive Engineer
Rajarajeshwari Nagar
BBMP Bengaluru

Corporate Off.: No.133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalore-560
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CIVIL QUALITY CONSULTANTS & ENGINEERS

ISO 9001:2015 Certified & NABL Accredited Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR

Ref No.: CQCE/BBMP/NCR/17/2022-2023 Date : 27.02.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE

AASHTO T 164 & AASHTO T 30

CLIENT	: Assistant Executive Engineer, RR Nagar Sub Division, BBMP, Bangalore.
AGENCY	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
NAME OF THE WORK	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Jnanajyothinagar - 8th Cross Road(W1211)From South side to North side
DATE OF TESTING	27.02.2023

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	472	472.6
3. Weight of Asphalt and Mineral matter Extracted, g	28	27.4
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	28	27.4
7. Bitumen content in %	5.60	5.48
8. Average	5.54	

GRADATION AFTER EXTRACTION

SIEVE SIZE mm	Test 1 Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	15.1	15.1	3.2	96.8	90 - 100
9.5	53.2	68.3	14.5	85.5	70 - 88
4.75	92.7	161	34.1	65.9	53 - 71
2.36	45.7	206.7	43.8	56.2	42 - 58
1.18	43.6	250.3	53.0	47.0	34 - 48
0.600	57.2	307.5	65.1	34.9	26 - 38
0.300	51.4	358.9	76.0	24.0	18 - 28
0.150	32.6	391.5	82.9	17.1	12 - 20
0.075	45.5	437	92.6	7.4	4 - 10

SIEVE SIZE mm	Test 2 Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	14.6	14.6	3.1	96.9	90 - 100
9.5	56.2	70.8	15.0	85.0	70 - 88
4.75	94.7	165.5	35.0	65.0	53 - 71
2.36	53.4	218.9	46.3	53.7	42 - 58
1.18	45.5	264.4	55.9	44.1	34 - 48
0.600	51.6	316	66.9	33.1	26 - 38
0.300	30.4	346.4	73.3	26.7	18 - 28
0.150	38.9	385.3	81.5	18.5	12 - 20
0.075	47.4	432.7	91.6	8.4	4 - 10

Note:

The Material is satisfied as per the Requirements.

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division

Corporate Off.: No. 133, Bhuvaneshwari Building, Doddabasti Main Road, Bangalore-560
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CIVIL QUALITY CONSULTANTS & ENGINEERS

ISO 9001:2015 Certified & NABL Accredited Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR

No.: CQCE/BBMP/NCR/17/2022-2023

Date : 28.02.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE

AASHTO T 164 & AASHTO T 30

CLIENT	: Assistant Executive Engineer, RR Nagar Sub Division, BBMP, Bangalore.
AGENCY	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
NAME OF THE WORK	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Jnanajyothinagar - 9th Cross Road(W1197)From North side to Ullala Main Road
DATE OF TESTING	28.02.2023

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	472.5	472
3. Weight of Asphalt and Mineral matter Extracted, g	27.5	28
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	27.5	28
7. Bitumen content in %	5.50	5.60
8. Average	5.55	

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	12.2	12.2	2.6	97.4	90 - 100
9.5	62.3	74.5	15.8	84.2	70 - 88
4.75	81.7	156.2	33.1	66.9	53 - 71
2.36	54.2	210.4	44.5	55.5	42 - 58
1.18	49.2	259.6	54.9	45.1	34 - 48
0.600	56.5	316.1	66.9	33.1	26 - 38
0.300	48.3	364.4	77.1	22.9	18 - 28
0.150	33.7	398.1	84.3	15.7	12 - 20
0.075	48.5	446.6	94.5	5.5	4 - 10

SIEVE SIZE	Test 2				
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	13.4	13.4	2.8	97.2	90 - 100
9.5	63.5	76.9	16.3	83.7	70 - 88
4.75	92.8	169.7	36.0	64.0	53 - 71
2.36	45.7	215.4	45.6	54.4	42 - 58
1.18	52.5	267.9	56.8	43.2	34 - 48
0.600	54.6	322.5	68.3	31.7	26 - 38
0.300	49.5	372	78.8	21.2	18 - 28
0.150	28.6	400.6	84.9	15.1	12 - 20
0.075	39.8	440.4	93.3	6.7	4 - 10

Note:

1. The Material is satisfied as per the Requirements.

Assistant Executive Engineer
Rajarajeshwarinagar, BBMP Bengaluru

Authorised Signatory

Corporate Off.: No. 133, Bharatheshwar Nagar, Doddabasti Main Road, Bangalore-560 056
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CIVIL QUALITY CONSULTANTS & ENGINEERS

ISO 9001:2015 Certified & NABL Accredited Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

CQCE/BBMP/NCR/17/2022-2023

Date : 22.02.2023

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE
AASHTO T 164 & AASHTO T 30

	: Assistant Executive Engineer, RR Nagar Sub Division, BBMP, Bangalore.
AGENCY	: M/s Sri Nanjundeshwara Construction (Rajesh M), Contractor, Bangalore.
NAME OF THE WORK	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Location	Jnanajyothi nagara - HMR School Road(W1243)From Hotel Arogya to Dead end
DATE OF TESTING	22.02.2023

BITUMEN CONTENT DETERMINATION

Description	Sample 1	Sample 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	472.2	472.7
3. Weight of Asphalt and Mineral matter Extracted, g	27.8	27.3
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g	-	-
6. Weight of Bitumen Extracted, g. (corrected)	27.8	27.3
7. Bitumen content in %	5.56	5.46
8. Average	5.51	

GRADATION AFTER EXTRACTION

SIEVE SIZE	Test 1				
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	13.3	13.3	2.8	97.2	90 - 100
9.5	65.9	79.2	16.8	83.2	70 - 88
4.75	91.4	170.6	36.1	63.9	53 - 71
2.36	42.8	213.4	45.2	54.8	42 - 58
1.18	43.6	257	54.4	45.6	34 - 48
0.600	57.2	314.2	66.5	33.5	26 - 38
0.300	56.7	370.9	78.5	21.5	18 - 28
0.150	24.9	395.8	83.8	16.2	12 - 20
0.075	51.5	447.3	94.7	5.3	4 - 10

SIEVE SIZE	Test 2				
mm	Weight Retained, gm	Cummulative Weight Retained	%Cummulative Retained	% Passing	Requirement as per MORTH table 500.17
19	0	0	0	100	100
13.2	14.4	14.4	3.0	97.0	90 - 100
9.5	63.7	78.1	16.5	83.5	70 - 88
4.75	92.5	170.6	36.1	63.9	53 - 71
2.36	46.7	217.3	46.0	54.0	42 - 58
1.18	53.4	270.7	57.3	42.7	34 - 48
0.600	52.1	322.8	68.3	31.7	26 - 38
0.300	42.6	365.4	77.3	22.7	18 - 28
0.150	33.7	399.1	84.4	15.6	12 - 20
0.075	35.2	434.3	91.9	8.1	4 - 10

The Material is satisfied as per the Requirements.

Assistant Executive Engineer
Rajarajeshwarinagaru Sub Division
BBMP Bengaluru

Corporate Off.: No. 133, Bhoomi Nagar, Doddabasti Main Road, Bangalore-
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Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

Date: 23.02.2023

TEST REPORT ON STABILITY OF MIX

Client	:	**: Assistant Executive Engineer,** RR Nagar Sub Division, BBMP, Bangalore.
Agency	:	**: M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of the Work	:	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Type of Mix	:	Bituminous Concrete
Date of Testing	:	23.02.2023

The results of the tests conducted on the Bituminous Concrete mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	9.34	10.27	9 Kn (min)
2	Marshal flow, mm	2.69	3.81	2 – 4
3	Percent air voids in Mineral Aggregate	13.55	14.46	13 – 15
4	Voids in Compacted Mix	3.63	5.17	3 – 6
5	Percent Voids filled with Bitumen	67.02	72.27	65 - 75
6	Density, g/cc	2.25	2.27	--

Note:
The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Corporate Off.: No. 133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalore-56
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CIVIL QUALITY
CONSULTANTS & ENGINEERS
ISO 9001:2015 Certified & NABL Accredited
Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR

Job No.: CQCE/BBMP/NCR/17/2022-2023

Date: 25.02.2023

TEST REPORT ON STABILITY OF MIX

Client	:	**: Assistant Executive Engineer,** RR Nagar Sub Division, BBMP, Bangalore.
Agency	:	**: M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of the Work	:	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Type of Mix	:	Bituminous Concrete
Date of Testing	:	25.02.2023

The results of the tests conducted on the Bituminous Concrete mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	9.55	10.61	9 Kn (min)
2	Marshal flow, mm	2.29	3.57	2 – 4
3	Percent air voids in Mineral Aggregate	13.74	14.50	13 – 15
4	Voids in Compacted Mix	3.63	5.89	3 – 6
5	Percent Voids filled with Bitumen	68.22	73.11	65 - 75
6	Density, g/cc	2.26	2.27	–

Note:

The Material is satisfied as per the Requirements.

For CIVIL QUALITY CONSULTANTS & ENGINEER

Authorised Signatory

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

Corporate Off.: No. 133, Bhuvaneshwarinagar, Doddabasti Main Road, Bangalor
Contact: 8553518550, 080-23240644 Email: civilqualityconsultants@gmai

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CIVIL QUALITY CONSULTANTS & ENGINEERS

ISO 9001:2015 Certified & NABL Accredited Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

Date: 27.02.2023

TEST REPORT ON STABILITY OF MIX

Client	:	: **Assistant Executive Engineer,** RR Nagar Sub Division, BBMP, Bangalore.
Agency	:	: **M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of the Work	:	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Type of Mix	:	Bituminous Concrete
Date of Testing	:	27.02.2023

The results of the tests conducted on the Bituminous Concrete mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	10.29	9.03	9 Kn (min)
2	Marshal flow, mm	3.48	2.95	2 – 4
3	Percent air voids in Mineral Aggregate	13.62	14.47	13 – 15
4	Voids in Compacted Mix	5.72	3.85	3 – 6
5	Percent Voids filled with Bitumen	68.14	72.59	65 - 75
6	Density, g/cc	2.25	2.27	--

Note:

⇒ *The Material is satisfied as per the Requirements..*

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

For CIVIL QUALITY CONSULTANTS & ENGINEERS

Authorised Signatory

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CIVIL QUALITY
CONSULTANTS & ENGINEERS
ISO 9001:2015 Certified & NABL Accredited
Laboratory as per ISO/IEC - 17025-2017

Testing of Construction Material - Mechanical, Soil, Bitumen, Non Destructive Testing Services, Project Management Consultants, Third Party Quality Assurance, DPR.

Job No.: CQCE/BBMP/NCR/17/2022-2023

Date: 28.02.2023

TEST REPORT ON STABILITY OF MIX

Client	:	**: Assistant Executive Engineer,** RR Nagar Sub Division, BBMP, Bangalore.
Agency	:	**: M/s Sri Nanjundeshwara Construction (Rajesh M),** Contractor, Bangalore.
Name of the Work	:	: Providing Gallery to Musical Fountain in JP Park in Ward No.17 and Drilling of Borewells, Providing Water Supply and Construction of RO Plants in R R Nagar Constituency under Package -2022-23 RRN-DIV-(10), BBMP, Bangalore
Type of Mix	:	Bituminous Concrete
Date of Testing	:	28.02.2023

The results of the tests conducted on the Bituminous Concrete mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshal Stability, Kn	9.28	10.86	9 Kn (min)
2	Marshal flow, mm	2.36	3.24	2 – 4
3	Percent air voids in Mineral Aggregate	13.54	14.29	13 – 15
4	Voids in Compacted Mix	3.11	5.23	3 – 6
5	Percent Voids filled with Bitumen	67.48	72.31	65 - 75
6	Density, g/cc	2.27	2.26	--

Note:
The Material is satisfied as per the Requirements.

Assistant Executive Engineer
Rajarajeshwari Nagar Sub Division
BBMP Bengaluru

For CIVIL QUALITY CONSULTANTS & ENGINE

Authorised Signatory

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